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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,866	07/14/2000	MARTIN HOTTNER	FA/175A	4070

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EXAMINER
BEFUMO, JENNA LEIGH

ART UNIT	PAPER NUMBER
1771	11

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/508,866	HOTTNER, MARTIN	
	Examiner	Art Unit	
	Jenna-Leigh Befumo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26,28-69 and 73-93* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26,28-69 and 73-93* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *1* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Amendment A, submitted as Paper No. 10 on September 17, 2002, has been entered. Due to the fact that the Application was submitted missing claims 18 – 28, the claims from 29 onward have been renumbered starting at claim 18. Claims 27 and 70 – 72 (originally numbered 38 and 81 – 83) have been cancelled. Claims 1, 10, 11, 15, 21, 25, 26, 35, 36, 39, 42, 44, 48, 51, 56, 60, 61, 66, and 67 (originally, claims 1, 10, 11, 15, 32, 36, 37, 46, 47, 50, 53, 55, 59, 62, 67, 71, 72, 77 and 78) have been amended and claims 73 – ~~104~~ 93 (originally 84 – 104) have been added. Therefore, the pending claims are 1 – 26, 28 – 69, and 73 – 93. It is suggested that the Applicant amend the claim numbers, and the claim dependencies, so that it is clear the Applicant is referring to the new claim numbers and not the original claim numbers.

2. The provisional double patenting rejection set forth in section 6 of the previous Office Action is withdrawn since Application 09/308,544 has gone abandoned.

3. Amendment A is sufficient to withdraw the objection to the specification in section 7 of the previous Office Action.

4. Amendment A is sufficient to overcome the objections to claims 10, 46, 55, and 78 set forth in sections 8 – 10 of the previous Office Action.

5. Additionally, Amendment A is sufficient to overcome the 35 USC 112 rejections set forth in sections 13 – 15 of the previous Office Action.

6. Amendment A is sufficient to overcome the 103 rejections set forth in sections 17 – 19 of the previous Office Action since the Applicant has amended the claims to more clearly seam between the substrate and the laminate. Specifically, the Applicant has recited that the second

component in the bicomponent fiber is melted to form the seam. However a new rejection has been set forth below.

Claim Objections

7. Claim 92 is objected to because of the following informalities: Should the term "1polytetrafluoroethylene" in line 2, have the 1 in the front of the name? Appropriate correction is required.

8. Claims 51 and 82 are objected to because of the following informalities: The phrase "intermediate between" in line 2 is redundant and grammatically awkward. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. Claims 61 – 69 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 61 recites the limitation "two waterproof laminates" in line 1. There is insufficient antecedent basis for this limitation in the claim. Is the Applicant referring to the waterproof substrate as one waterproof laminate and the laminate as the second waterproof laminate? Or are the waterproof laminate layers in addition to the two layers set forth in claim 1? Claim 66 is similarly rejected. Claims 62 – 65 and 67 – 69 are rejected due to their dependency on claim 61 or 66. The claims are examined as if there are only two layers total combined together to form the seam.

Claim Rejections - 35 USC § 103

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claims 1 – 17, 20 – 26, 28 – 50, 52, 55 – 69, 73 – 81, 83 – 86, 88, 89, and 91 – 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03-174051 (English Translation) in view of Gore et al. (4,194,041) and French (4,555,293).

JP 03-174051 discloses a latent foamable fibrous structure made from composite fibers (claim 1). The fabric can be woven knit, nonwoven or mesh (page 4, paragraph 2). And the composite fibers can long or short fibers in the form of core/clad (or sheath) composite fibers, multi-core/sheath composite fibers, multi-layered composite fibers, or radial multi-layer composite fibers (page 4, paragraph 3). The composite fibers comprise a foaming component, or Applicant's second component, and a fiber component, or Applicant's first component, with the foaming component preferably the sheath component (page 7, paragraph 2). The fibers can be formed into spun staple yarns or continuous filament yarns (page 7, paragraph 3). The fibers can range in size from 0.5 to 10,000 denier (page 7, paragraph 4). The foaming component can be made from polyethylene, polypropylene, polyurethane, polyamide copolymer, polyester, or a polyester copolymer mixed with a foaming agent (page 6, paragraph 4 and 6). The foaming agent should be a material having an activation temperature at or below the softening point of the foam body part, such as hydrocarbons, alcohols, esters, ethers, or ketones (page 6, paragraph 6). The fiber component can be various synthetic polymers including polyester, polyethylene, polypropylene, or polyamide, with various types of nylons being preferred (page 6, paragraph 5). With Example 1 disclosing Nylon 6 is used as the core fiber component in a 50/50 mixture with the polystyrene sheath component (page 8). JP 03-174051 does teach the ratio of foam

component to fiber component 90/10 as well (page 6, paragraph 2). Finally, JP 03-174051 discloses that the latent foaming fabric can be used in winter skiing and climbing clothes as well as fishing clothes.

However, JP 03-174051 fails to teach adding a waterproof, vapor permeable functional layer to the fabric. Gore et al. is drawn to waterproof protective garments. Gore et al. teaches that protective garments for wear in rain and other wet environments should keep the wearer dry and allow moisture to evaporate (column 1, lines 12 – 15). Gore et al. discloses creating a waterproof and breathable layered article by adding a hydrophilic layer and a hydrophobic layer such as expanded PTFE to an article (column 4, lines 55 – 65). Gore et al. teaches the layered articles produce can include textile layers and be used in outerwear such as down jackets and sleeping bag shells (column 5, lines 39 – 54). Therefore, it would have been obvious to one having ordinary skill in the art to add a breathable, waterproof functional layer to the winter skiing fabrics and fishing fabrics produced by JP 03-174051 to improve the water-resistance of the fabric while allowing the fabric to remain breathable. Further, the PTFE layer would also help to improve the wind resistance of the fabric.

Even though JP 03-174051 fails to teach forming seams with the foamable fabric, the winter skiing and fishing fabrics would inherently have seams. Therefore, one of ordinary skill in the art would be required to choose the best way to form the fabrics seams. Since JP 03-174051 teaches using the fabric is wet environments such as skiing and fishing one of ordinary skill in the art would desire seams which are resistant to water. French discloses forming seams in thermoplastic materials by thermally bonding the layers together (abstract). French discloses that known methods of forming seams, such as sewing producing pinholes in the fabric and use

of adhesives requires special adhesives during manufacture (column 1, lines 27 – 32). The thermoplastic materials can be bonded together via various seam configurations (Figures 4, 8, 9b, 10b, 11a, and 11b). French discloses that the thermal bonding method produces a seam with a strong airtight and waterproof seal (column 10, lines 18 – 20). The material which is thermally bonded may be coated or non-coated (column 10, line 48). Finally, French discloses that the seams properties such as the thickness and shape of the seam are determined by the size and shape of the heating element and the configuration of the melt zone (column 5, lines 30 – 35). Therefore, it would have been obvious to one of ordinary skill in the art to use the thermally bonded seams taught by French in the fabric taught by JP 03-174051 to produce strong airtight and waterproof seams without puncturing the fabric or needed extra components such as adhesives to form the seam.

Further, it would have been obvious to one of ordinary skill in the art to thermally bond the seams by melting the lower melting component in the fabric, that is the sheath component, in the fabric taught by JP 03-174051 since melting the lower melting component would require less energy to form the seal while maintaining the structure of the fiber component in the bicomponent fabric. Therefore, claims 1, 9, 13, 14, 15, 17, 20 – 22, 25, 26, 34, 38, 39, 41 – 43, 45 – 50, 52, 55 – 57, 60, 73, 74, 76 – 81, 83, 86, 88, 89, and 91 – 93 are rejected.

Additionally, it would have been obvious to one of ordinary skill in the art to optimize the width of the seam to produce a seam which is strong enough to undergo the various stresses which will be placed on the seam during use as well as being thick enough to maintain a tight water seal, while keeping the as narrow as possible to maintain the fabrics flexibility and hand. Additionally, it has been held that discovering an optimum value of a result effective variable

involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215. Therefore, claims 6 and 29 are rejected.

With respect to the claims reciting the melting temperatures of the first and second components, since JP 03-174051 teaches using the same materials as the Applicant than these polymers will have melting temperatures within the same ranges as those claimed. Therefore, claims 10 – 12, 35 – 37, 84, and 85.

Although the limitations of seam stiffness, seam water resistance, seam shrinkage, seam elongation, transverse seam strength, MVTR of the laminate, and water entry pressure of the laminate are not explicitly taught by JP 03-174051, Gore et al., or French, it is reasonable to presume that said limitations would be met by the combination of the two references. Support for said presumption is found in the use of similar materials (i.e. expanded PTFE functional layer, latent foamable fabric made from bicomponent fibers) and in the similar production steps (i.e. thermally bonding the fabric to form watertight seams) used to produce the waterproof clothing. The burden is upon the Applicant to prove otherwise. Thus, claims 2 – 5, 7, 8, 23, 24, 28, 30 – 33, 58, 59, 61 – 69 are rejected.

Further, JP 03-174051 discloses that the fiber component can be made from various types of nylons or polyamide polymers. Therefore, it would have been obvious to one having ordinary skill in the art to choose nylon 6,6 as the fiber component, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. One of ordinary skill in the art would be motivated to choose nylon 6,6 as the fiber forming component since nylon 6,6 is more resistant to heat than nylon 6. Therefore, claims 16 and 40 are rejected.

Additionally, JP 03-174051 discloses that polyamide copolymers can be used as the foaming component. Thus, it would have been obvious to one of ordinary skill in the art to choose a copolymer comprising nylon 6 as the foaming component, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. Nylon 6 has a lower melting point and would produced a foamed fiber easier than other higher melting nylons. Thus, claims 44 and 75 are rejected.

13. Claims 19, 20, 51, 53, 54 82, 87, 90 rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03-174051 in view of Gore et al. and French as applied to claims 1 and 26 above, and further in view of Richmond (3,100,926).

The features of JP 03-174051 have been set forth above. JP 03-174051 fails to t4each using azodicarbonamide as the propellant in the foaming component. Richmond is drawn to latent foamable fibers. Richmond discloses that any conventional type of expansion agent can be selected as the propellant in the foaming component based on the temperature at which the propellant will decompose causing the fiber to foam (column 2, lines 12 – 25). Richmond teaches satisfactory blowing agents include azodicarbonamide (column 2, lines 35 – 39). Therefore, it would have been obvious to one of ordinary skill in the art to use azodicarbonamide as the propellant in the foaming component taught by JP 03-174051 since Richmond discloses that the propellant should be chosen based on the temperature at which the propellant would active. Therefore, one would be motivated to optimize the activation temperature based on the end use of the product, the melting temperatures of the components, and the processing temperatures of the fabric. Thus, claims 18, 19, 53, and 54. Further it would have been obvious to one of ordinary skill in the art to optimize the amount the fiber can expand by having the

propellant activate at a temperature between the melting temperature of the first and second components so that the softened second component can easily foam upon activation of the propellant. Thus, claims 51 and 82 are rejected.

Finally, Richmond discloses that the fiber forming core can be made from synthetic polymers as well as wire, paper, rayon, cotton and other natural fibers (column 4, lines 60 – 65). Therefore, it would have been obvious to one of ordinary skill in the art to choose natural fibers such as wool and silk as the core fibers in the bicomponent fibers taught by JP 03-174051 since Richmond teaches natural fibers can be used as the core of latent foamable bicomponent fibers. Additionally, the natural crimp and insulation properties of wool would help increase the bulk of the fabric giving the fabric a bulkier more appealing hand as well as better insulation properties for cold weather uses. Thus, claims 98 and 101 are rejected.

Response to Arguments

14. Applicant's arguments with respect to claims 1 – 26, 28 – 69, and 73 – 93 have been considered but are moot in view of the new grounds of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (9:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
March 17, 2003

TERREL MORRIS
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